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ABSTRACT

Developed for use during National Geography Awareness Week, this packet contains ideas for integrating geography instruction with other subject matter at both the elementary and secondary levels. The ideas vary in length and complexity, with average participation time 20 minutes. Some of the activities suggested are mapping activities, field trips, vocabulary exercises, writing exercises, applying geographic concepts and tools to mathematical problems, investigating various accents in drama class, and giving a geographic perspective to current health issues. (JB)

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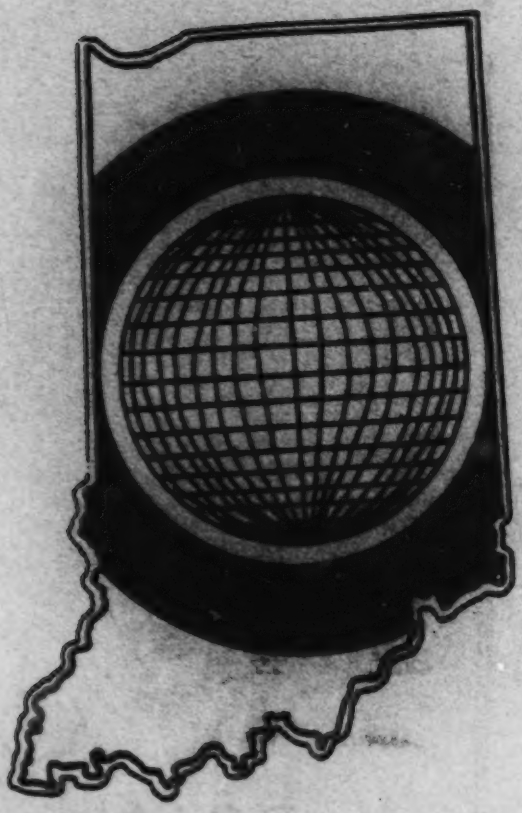
GEOGRAPHY IN INDIANA



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GEOGRAPHIC INTEGRATING IDEAS:

IDEAS & LESSONS TO INTEGRATE GEOGRAPHIC CONCEPTS INTO VARIOUS GRADE LEVELS & SUBJECTS IN K-12 CURRICULUM

Janice H. Hutchings, Editor

GEOGRAPHY EDUCATORS' NETWORK OF INDIANA
IUPUI DEPARTMENT OF GEOGRAPHY
425 University Boulevard
Indianapolis, IN 46202
(317) 274-8879

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1989

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Geography Awareness Week Response Forms

TO: Indiana Superintendents, Principals, and Teachers

FROM: Janice Hutchings
GENI Alliance Assistant

DATE: October 25, 1989

RE: National Geographic Awareness Week

The enclosed packet is for your use during National Geography Awareness Week, November 12-18, 1989. This event was proclaimed by Congress and is sponsored by the National Geographic Society and the Geography Educators' Network of Indiana (GENI) to raise awareness of Geography.

Because Geography is an interdisciplinary subject and integrates so well with other subject matter, we would like to see maximum involvement of all grade levels and disciplines during this week. GENI is providing this packet of "Integrating Ideas" for use by every teacher in your building who wants to focus on a "geographic idea" sometime during Geography Awareness Week. The Integrating Ideas vary in length and complexity. Average participation could be as little as 20 minutes of class time. In our dealings with K-12 teachers, we have found that they are a creative bunch. Give a teacher one idea and he or she can think of 40 more! Allow these ideas to spark your own ideas. Use your own creativity to enhance this project.

This packet has been designed so that teachers can remove the pages pertaining to their specific needs. Please place this packet in your media center or the school office for maximum distribution or distrubute it to the appropriate department chairmen and/or teachers.

We would appreciate it if you would let us know how these ideas worked for you; even more, what new ideas you have to share. EVERY TEACHER WHO RETURNS A COPY OF THE ENCLOSED "RESPONSE FORM" WILL RECEIVE A CERTIFICATE OF PARTICIPATION AND A MAP OF THE UNITED STATES.

The GENI Office would be glad to assist you if you have questions or need further explanation. Please call the IUPUI Department of Geography and ask for Janice Hutchings or Kathy Lamb [(317) 274-8879]. Thank you for your support.

Teachers and students: Have fun with Geography!!!

JHH:cds
Enclosures

STATE OF INDIANA

EXECUTIVE DEPARTMENT
INDIANAPOLIS

PROCLAMATION

Executive Order

TO ALL TO WHOM THESE PRESENTS MAY COME, GREETING:

WHEREAS, geography is the study of civilization and its universe and the physical phenomena which make up the land, sea and air and the flora and fauna within; and

WHEREAS, the study of geography is essential to understand our relationship with our surroundings; and

WHEREAS, there exists an expanding responsibility for worldwide involvement and global influence in our state and nation; and

WHEREAS, despite the critical need for more awareness, the subject of geography has suffered decline at all levels of our educational system; and

WHEREAS, ignorance of geography and all that it entails places Hoosier citizens at a disadvantage in international trade, manufacturing and other worldwide business efforts; and

WHEREAS, the value of studying geography at all levels of formal curriculum is indispensable as we face the today's challenges and those of the tomorrows yet to be;

NOW, THEREFORE, I, EVAN BAYH, Governor of the State of Indiana, do hereby proclaim November 12 - 18, 1989, as

GEOGRAPHY AWARENESS WEEK

in the State of Indiana, and I urge all Hoosier citizens to appreciate the vital role of geography in our lives.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused to be affixed the Great Seal of the State of Indiana at the Capitol in Indianapolis on this 24th day of October, 1989.

Evan Bayh

BY THE GOVERNOR: Evan Bayh
Governor of Indiana

ATTEST: Joseph H. Hogsett
Secretary of State

Geography Educators' Network of Indiana

425 University Boulevard, Indianapolis, IN 46202
317/274-8879

National Geography Awareness Week
November 12-18, 1989

All teachers who integrate these geographic ideas or others during National Geography Awareness Week will receive a U.S. map and a Certificate of Participation by notifying the GENI office at the address above.

Outside the Classroom Ideas

for Geography Awareness Week

Public Awareness:

1. Contact your MAYOR to proclaim Geography Awareness Week in your community (proclamation enclosed).

2. Distribute a press release of your school's activities to local newspapers, radio, TV stations (sample enclosed). Write to your congressmen in support of the need for geographic education.

3. Speak to local service clubs, women's organizations, and senior citizens groups about the state of geographic education in your area. Many people may not know.

4. Set up a booth in malls to display geographic materials and to spark conversations with local parents and citizens.

5. Arrange for local businesses to display signs, posters, and flyers about Geography Awareness Week. Bank signs, local computer message boards and flickering signs are good vehicles to transmit messages to the public.

6. Introduce yourself as a person excited about geography and how geographic education can be strengthened in Indiana.

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Ideas for integrating geographic concepts into.....

'Seating Plan Drawing (Kdg. through Early Secondary)

Objectives: (1) To use a basic element of any classroom to to introduce the concept of SPATIAL ARRANGEMENTS.

(2) To introduce to students at an early age the thought of their LOCATION in space and human impact upon the environment.

1. Draw (map) a large seating plan of your classroom on poster-board or large paper. Label with student names. Discuss the concept of the student's spatial location by designating the rows by colors and animal names. Describe this seating plan as a representation of a "map" of your location.

2. Designate imaginary equator/prime meridian, north/south poles in logical places. Discuss the following:

   a. Latitude/Longitude

   b. North/South/East/West in relation to your room

3. Discuss these and other questions relating to the environment and human impact:

   a. What if Susie's desk was located in the mountains? (Discuss weather, clothing, communication, and transportation impacts.)

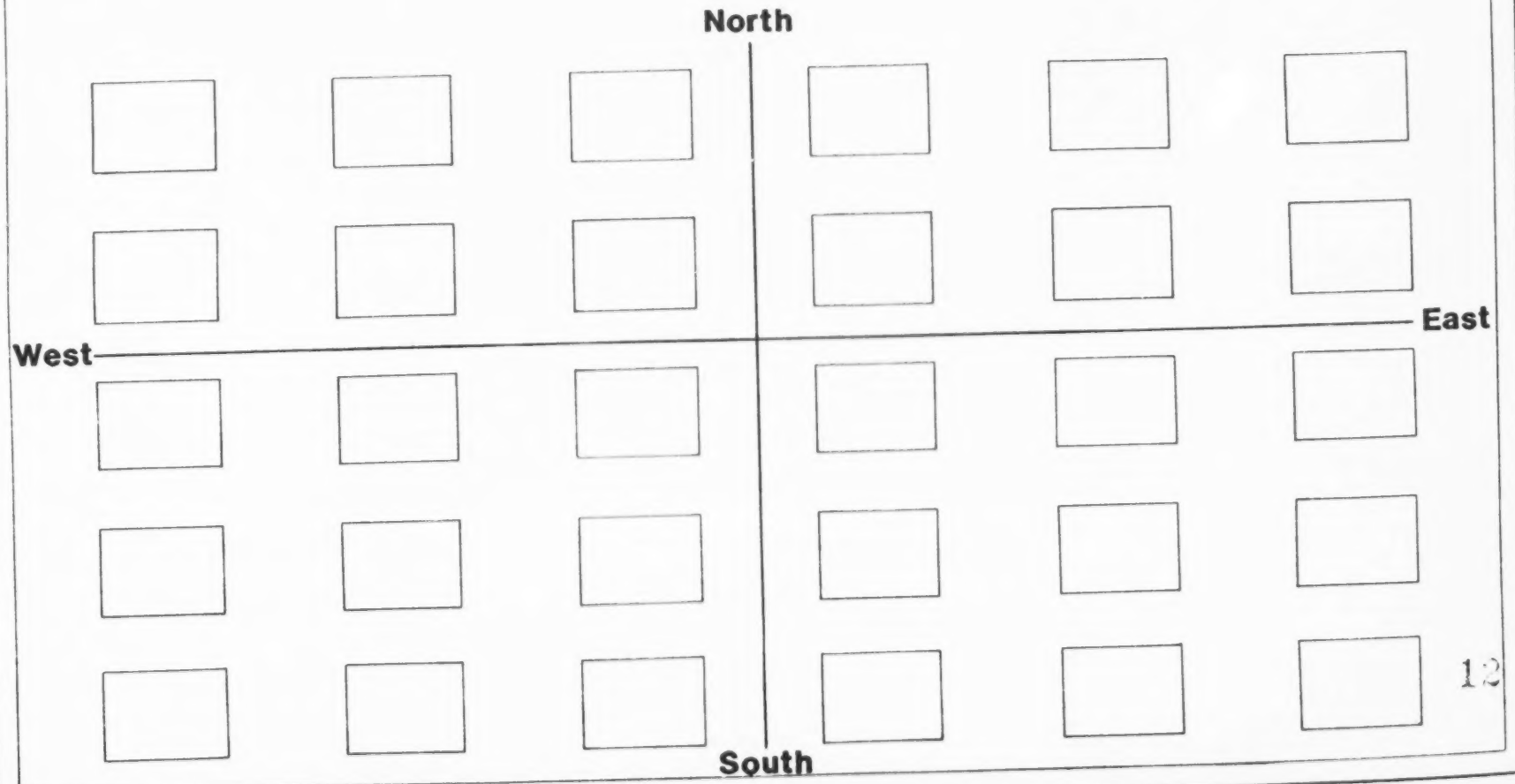
   b. What if Kathy's desk was located in an African desert? (Discuss the implications of dress, weather, food sources, transportation.)

   c. What if Bill's desk was the center of downtown Chicago?

These are just a few examples of how geographic concepts can be introduced to students through simple examples to which they can relate personally.

INTERGRATED LESSON PLANS

HAVE YOU EVER THOUGHT OF YOUR SEATING PLAN
AS
A LESSON IN LATITUDE AND LONGITUDE?



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Ideas for integrating geographic concepts into....

ELEMENTARY CLASSROOMS - ELEMENTS OF THE ENVIRONMENT

Objective: To observe, discuss and artistically map various mediums of the physical surroundings.

1. Discuss the elements of the environment in which we live:

--air: the atmosphere, clouds, weather, overall climate impact on our region, pollution and its impact.

--water: Where is our local water source for drinking, recreation, industry. Discuss impacts of water pollution, toxic materials entering the water source.

--land: Discuss surrounding land forms, soil types.

--energy: Discuss sources of energy to the school, to students' homes. Where is the source? Map the sources and discuss how electricity or gas gets to their houses. What happens when a storm cuts off that supply? What would happen if energy consumption had to be greatly curtailed? How would our lives change?

--animals: Look for evidence of animals (feathers, tracks). Discuss their food sources, consequences of weather on them. Discuss human impact upon animal families in the surrounding area; i.e., what happens to the rabbit family when the empty field is mowed, plowed, or left alone?

--plants: Discuss the similarities and differences between: a) leaves of herbaceous/woody plants; b) tall/short grasses; c) weed distribution (Where are the most weeds? Why?)

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Ideas for integrating geographic concepts into....

Elementary Grades--Walking Field Trip

Objectives: (1) To relate to students the inclusiveness of geographic concepts by making them aware of a "geographic" perspective as they observe everything around them.

(2) To stimulate synthesis skills by mapping what has been observed.

1. Take a walking field trip around the school grounds. (Plan this with a map [blueprint of school grounds or topographic map]) Observe and discuss:

   a. The landscape (What is natural; what is human? What is both?)

      --physical: Discuss the surroundings--trees, plants (differentiate woody and herbaceous), flat land, hills, climatic observations (clouds, temperature, etc.)

      --cultural/human impact: Observe buildings, transportation networks, economic functions (stores, businesses)

   b. The impact humans have on the environment:

      --What animals would live here if there wasn't a school or playground?

      --What plants are here because the school is here? What plants could be here if there wasn't a school building?

      --What effects does the school have on the surrounding land? The air? Nearby water?

Elementary Grades--Walking Field Trip (continued)...

2. Back in the classroom, assign each student to map the area you walked for homework. When the maps return to class, compare and contrast the observations. Discuss the distribution patterns of the various elements. For example, are most of the human impact items found near the parking lot? Why?

3. Discuss the impact of the complete removal of such things as grass (dust, flooding), trees (erosion), etc.

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Ideas for integrating geographic concepts into.....

VOCABULARY (Grade Four)

Discuss and learn these words using maps and pictures:

List A

Indiana
Indianapolis
Gary
South Bend
Fort Wayne
Anderson
Frankfort
Terre Haute
New Albany
Bloomington

List B

transportation
walking
horses
riverboat
canal
railroad
streetcar
truck
interstate
telecommunications

List C

cultures
Amish
New Harmony
Delaware Indians
Potawatomie
Miami
French
English
frontiersmen
Germantown

List D

creek
limestone
glacial till
soil
moraine
sinkhole
vegetation
erratics
uplands
plains

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Ideas for integrating geographic concepts into.....

VOCABULARY (Grade Five)

Discuss and learn these words using maps and pictures. Compare and contrast:

List A (Cities)

New York City
Miami
Orlando
Tampa
Charleston
Detroit
Minneapolis
San Diego
Houston
New Orleans

List B (Regions)

Midwest
Southwest
Yukon
Rocky Mountain
Appalachia
Great Plains
New England
Mississippi Delta
Pacific West Coast
Gulf States

List C (States)

Oklahoma
Michigan
Wisconsin
Ohio
Tennessee
Missouri
South Carolina
North Carolina
Florida
Kentucky

List D (Lakes)

Lake Erie
Lake Ontario
Lake Huron
Lake Michigan
Lake Superior
Lake Okeechobee
Lake Champlain
Great Salt Lake
Lake Pontchartrain
Winnibigoshish Lake

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Ideas for integrating geographic concepts into.....

VOCABULARY (Grade Six)

Discuss and learn these words using maps and pictures:

List A (Countries)

Denmark
Hungary
Saudi Arabia
Bolivia
Bulgaria
Costa Rica
Tunisia
Madagascar
Thailand
Malaysia

List B (Cities)

Mexico City
Brasilia
Havana
Caracus
Lima
Santiago
Managua
San Salvador
Montevideo
Asuncion

List C

peso (monetary unit of Mexico)
cruzeiro (monetary unit of Brazil)
bolivar (monetary unit of Venezuela)
dinero (money)
costar (to cost)
?cuanto cuesta?
moneda (coin)
cambio (change)
pagar (to pay)
adeudar (to owe)

List D

Inca
Mixtec
Maya
Aztec
Toltec
Nahuatl
Quechua
Quetzalcoatl
Teotihuacan
Olmec

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Ideas for integrating geographic concepts into.....

English and Reading (Elementary)

Objective: To enhance writing skills and analysis skills by using geographic concepts.

1. Point out descriptions of physical features from poetry and literature.

2. Find the origins of words found on the map or globe.

3. Compose sentences describing various facets pertaining to the five themes of geography which include:

   a. Location--Absolute/Relative:

      Absolute = the exact location usually longitude/latitude

      Relative = location as connected to other places;

   b. Place--the way a location is described and distinguished because of the added characteristics;

   c. Human/Environmental Interaction--relationships within places (human impact upon the physical landscape);

   d. Movement--mobility of people, goods, and ideas; travel/communication; transportation networks;

English and Reading (Elementary) continued....

e. Regions--areas on the surface of the Earth that are defined by similar characteristics, i.e., either physical or human (mountain ranges, river valleys, cornbelt, downtown business district;

4. After reading various short stories or poetry, discuss the geographic concept of "place" by describing the setting of the story. Contrast and compare it with Indianapolis or your neighborhood.

5. Write a short paragraph describing a particular location using only a physical map, i.e., describe the state of Colorado by stating such things as the shape of the state, the features evident including mountains, rivers, etc.

6. Have students write a paragraph describing their neighborhood.

7. Have students write a paragraph about the geographic features of the last trip they took of 50 miles or more.

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Ideas for integrating geographic concepts into.....

Global Studies/Social Studies (Elementary)

Objective: To use maps and discussions to explain the evolution of history and explain recent events.

1. Discuss current event topics brought to class by students. Find locations on a map or globe. Discuss the implications upon the rest of the world (i.e., recent Hurricane Hogo and San Francisco earthquake and implications to the inhabitants, effect on property and the surrounding environment (how did the hurricane affect the beach?), lack of energy to houses (electricity and water).

2. Discuss the reasons for the progression of early explorations--i.e., why was China and India "discovered" before the United States? Why was the east coast of the United States settled before the west coast?

3. Discuss origins of various cultures ("cradles" of culture).

4. Discuss how environment affects the people that live there (dress, food, music) and how it affects their economy.

5. Map world-wide distribution of various resources (oil, fishing, wheat, cotton, diamonds, coal).

6. Discuss the "global village" concept. The idea is that the entire planet is one community which needs to work together to sustain the ecology, economy, and political systems.

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Ideas for integrating geographic concepts into.....

MUSIC

Objective: For students to realize that physical and cultural influences impact the music world.

1. Study music, dances, and instruments from various cultures and world-wide locations. Locate their origins on a map or globe.

2. Discuss the significance of location and resources in regards to musical instruments.

3. Discuss the cultural impact upon the techniques and dress styles (costumes) of various dances. How did the local culture affect these. Did the local climate have an influence on the costumes?

4. Discuss famous musicians and locate on a map where they lived and worked. Discuss travel and transportation of their time and relate how this would affect the transmission and diffusion of the art forms.

5. Bring to your class a musician who has experience with extra-cultural music. Demonstrate that music in light of the environment from which it came. Use a map during discussion.

6. Study location of music instrument factories in Indiana. Glue pictures of instrument on map near the city. Reference: Indiana State Library.

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Ideas for integrating geographic concepts into.....

SCIENCE

Objective: The use of maps will apply visual impact of learned lessons.

1) Map animals of the world. Have students pick strange animals.

2) Have students learn about their birthstones (mineral or rock) and map as a class where these are found in the world.

3) Have students map the location of the ten major volcanoes/ earthquakes and discuss.

4) Have students map and color code different biomes of the world.

5) Have students divide into groups and design different food webs, chains, pyramids from each continent.

6) Have students design food webs for each ocean in the world.

7) Have students map/locate different snakes/spiders in the world and report to class.

8) Have students pick a "famous scientist" and report what country the scientist is from. Can map location of all scientists discussed.

-- over --

SCIENCE (continued)

9) Allow each student to pick an element from the periodical table for chemistry. List person (country location where discovery occurred) and map countries.

10) Map location where different cars are made in the world; re: Lamborghini is made in Italy.

11) Map where weird plants are found in the world and make a picture of each.

12) Map rain forests of the world.

13) Map deserts, grasslands of the world.

14) Map fruits found in <u>local</u> grocery stores and discuss the climates in which they were grown.

15) Map oil deposits found in the world.

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Ideas for integrating geographic concepts into.....

Arithmetic (Elementary)

Objective: To use geograhic concepts and tools to apply to mathematical problems.

1. Use maps to measure distance from one location to another. Add and subtract various distances using scale on map on "imaginary field trips." Estimate how long it would take to drive the trip at 60 m.p.h.

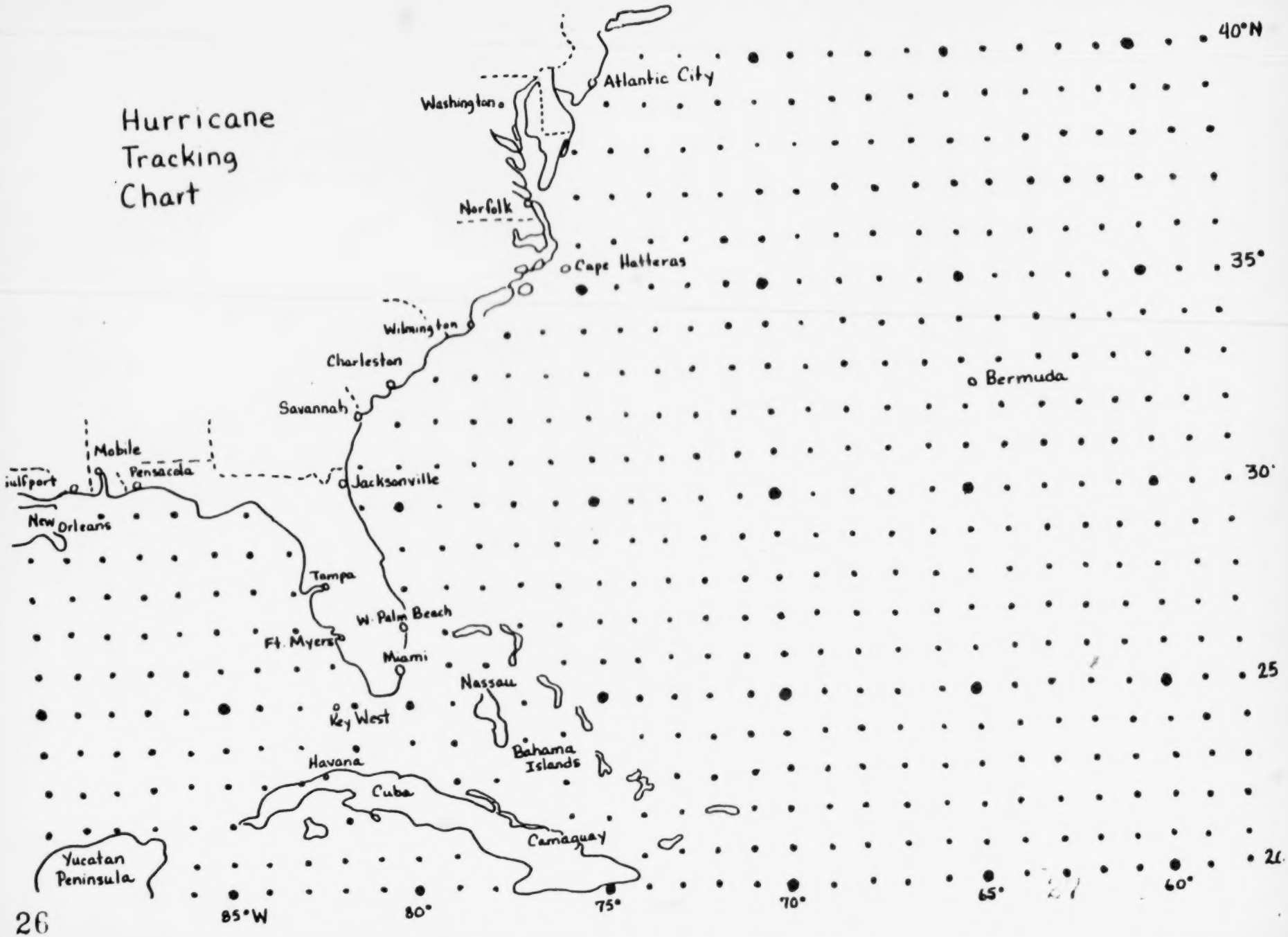
2. Using a map labeled with the geographic grid (latitude and longitude), introduce graph techniques (i.e. N.E. quadrant = Northern Hemisphere (latitude); east of Prime Meridian (longitude). A hurricane tracking chart is enclosed as a geographic grid to use in lessons.

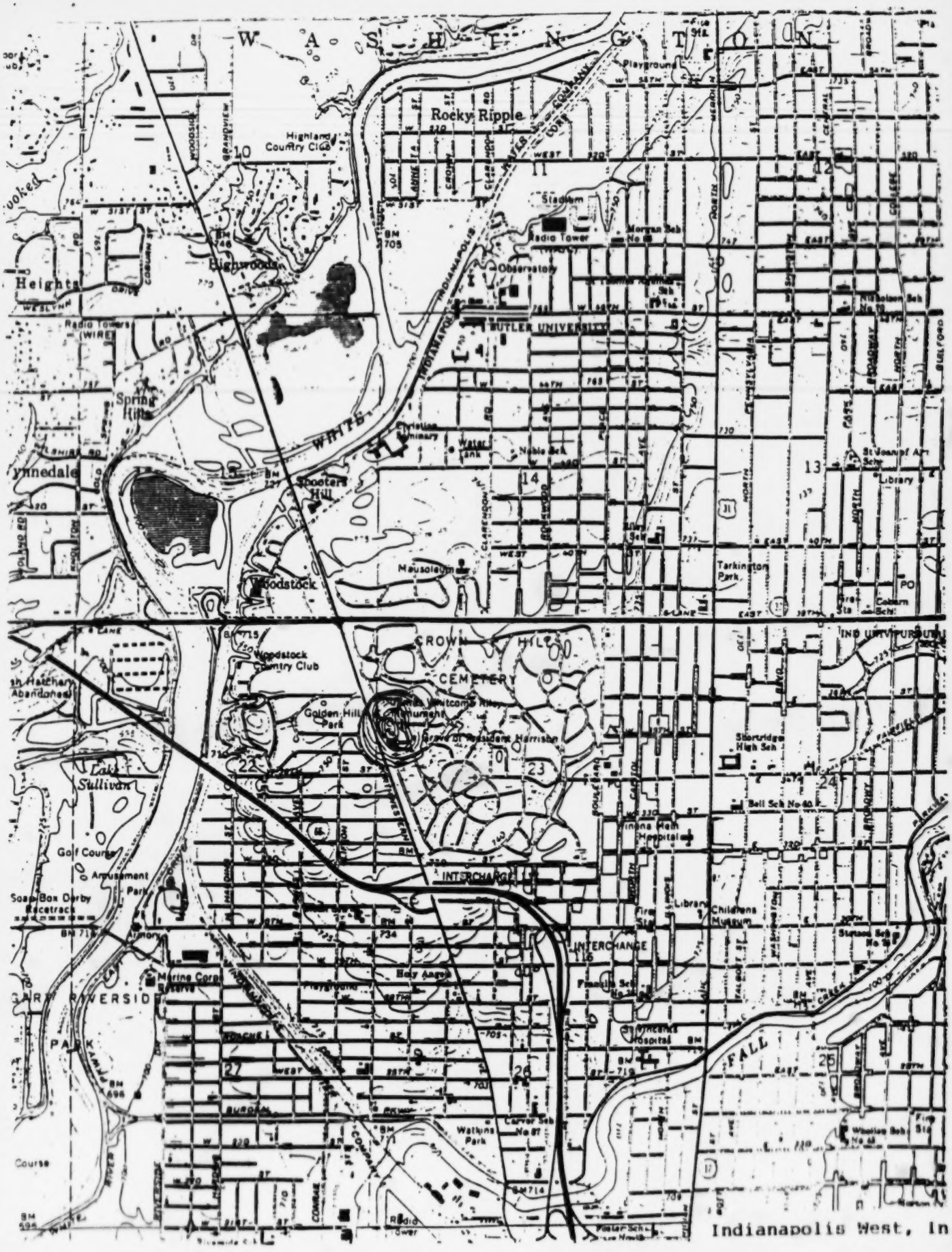
3. Use topographic maps to calculate differences in elevation and to estimate steepness of gradient.

4. Find the gradient (the drop in elevation per mile) of a particular river. Measure the length of the river channel by using a piece of string; find the difference in the elevation of the river from one Benchmark to another (example: BM 705 minus BM 696). Divide the length of the river by the difference in elevation to find the gradient expressed in feet per mile.

5. Discuss the township and range survey system. A sample lesson is provided.

6. Design a population pyramid with information on the class sizes of each grade level in your school. Discuss the pattern. Color by male and female.


Hurricane
Tracking
Chart
Atlantic City
Washington
Norfolk
Cape Hatteras
Wilmington
Charleston
Savannah
Bermuda
Mobile
Pensacola
Jacksonville
New Orleans
Tampa
W. Palm Beach
Ft. Myers
Miami
Nassau
Key West
Bahama Islands
Havana
Cuba
Camaguay
Yucatan Peninsula
40°N
35°
30°
25
85°W
80°
75°
70°
65°
60°

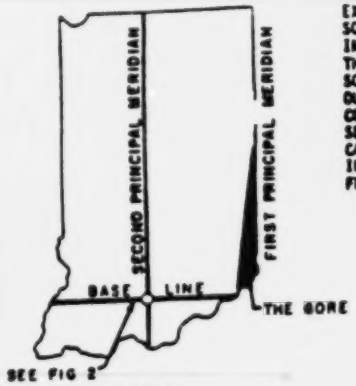

WASHINGTON
Rocky Ripple
Highland Country Club
Highwoods
Heights
Spring Hill
Shooters Hill
Woodstock
Woodstock Country Club
Crown Hill Cemetery
Golden Hill Park
Lake Sullivan
Golf Course
Amusement Park
Soap Box Derby Racetrack
Marine Corps Reserve
Riverside Park
Butler University
Observatory
Radio Tower
Stadium
Playground
Tarkington Park
Library
Shortridge High Sch
Indiana Hosp
Childrens Museum
Holy Angels
Watkins Park
Fall Creek
Interchange
Indianapolis West, In.

SURVEYING IN INDIANA

THE OFFICE OF THE MARION COUNTY SURVEYOR

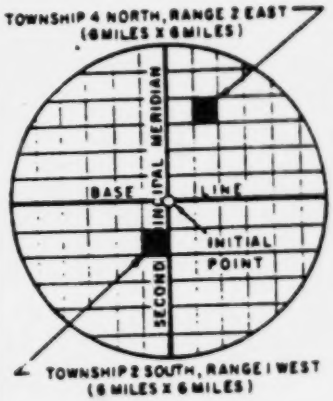
INDIANA WAS SURVEYED IN THE EARLY 1800'S ACCORDING TO THE INSTRUCTIONS ISSUED BY E. TIFFIN, SURVEYOR-GENERAL OF THE UNITED STATES FROM 1814 TO 1829.

FIG. 1



EXCEPT FOR A RELATIVELY SMALL SLIVER OF LAND IN SOUTHEAST INDIANA, CALLED "THE GORE", THE LAND IN INDIANA WAS ALL LAYED OUT FROM THE INTERSECTION OF THE SECOND PRINCIPAL MERIDIAN AND THE BASE LINE IN SOUTHERN INDIANA. THE LAND IN "THE GORE" WAS LAID OUT FROM THE FIRST PRINCIPAL MERIDIAN AND ITS CORRESPONDING BASE LINE. THE INTERSECTION OF THE SECOND PRINCIPAL MERIDIAN AND THE BASE LINE IS CALLED THE "INITIAL POINT" AND ALL OF THE LAND IN INDIANA WAS LAID OUT NORTH, SOUTH, EAST, AND WEST FROM THIS POINT. (SEE FIGURE 1)

FIG. 2


TOWNSHIP 4 NORTH, RANGE 2 EAST
(6 MILES X 6 MILES)
SECOND PRINCIPAL MERIDIAN
BASE LINE
INITIAL POINT
TOWNSHIP 2 SOUTH, RANGE 1 WEST
(6 MILES X 6 MILES)

THE LAND WAS FORMED INTO "TOWNSHIPS", EACH ONE BEING ABOUT 6 MILES ON A SIDE. THESE TOWNSHIPS FORM A GRID PATTERN THROUGHOUT THE STATE AS SHOWN IN FIGURE 2. THE NORTH-SOUTH COLUMNS OF TOWNSHIPS ARE CALLED "RANGES" AND THE EAST-WEST ROWS OF TOWNSHIPS ARE CALLED "TOWNSHIPS". THE RANGES ARE NUMBERED NORTH AND SOUTH FROM THE BASE LINE AND THE TOWNSHIPS ARE NUMBERED EAST AND WEST FROM THE PRINCIPAL MERIDIAN. EACH 6 MILE SQUARE TOWNSHIP, THEREFORE, HAS A CORRESPONDING DESIGNATION BASED ON ITS POSITION IN THE GRID. FOR EXAMPLE, THE TOWNSHIP THAT IS THE 4TH ONE NORTH OF THE INITIAL POINT AND THE 2ND ONE EAST OF THE INITIAL POINT IS CALLED "TOWNSHIP 4 NORTH, RANGE 2 EAST" AND THE TOWNSHIP THAT IS THE 2ND ONE SOUTH OF THE INITIAL POINT AND THE 1ST ONE WEST IS CALLED "TOWNSHIP 2 SOUTH, RANGE 1 WEST". (SEE SHADED AREAS IN FIGURE 2)

FIG. 3

TOWNSHIP 4 NORTH, RANGE 2 EAST

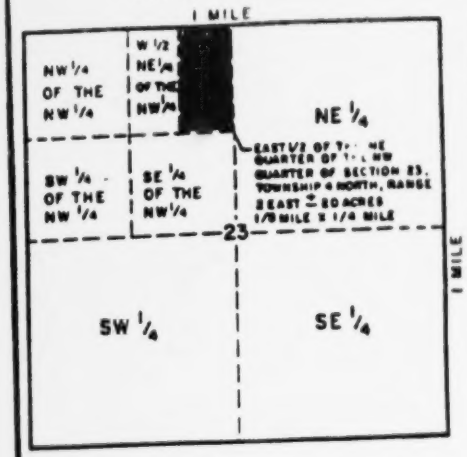
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22		24
30	29	28	27	26	25
31	32	33	34	35	36

SECTION 23, TOWNSHIP 4 NORTH, RANGE 2 EAST (1 MILE X 1 MILE)

EACH TOWNSHIP HAS BEEN FURTHER DIVIDED INTO 36 "SECTIONS", EACH ONE BEING ABOUT 1 MILE ON A SIDE AND CONTAINING ABOUT 640 ACRES. THE SECTIONS ARE NUMBERED STARTING WITH NUMBER 1 IN THE NORTHEAST CORNER OF THE TOWNSHIP AND GOING BACK AND FORTH TO END WITH NUMBER 36 IN THE SOUTHEAST CORNER OF THE TOWNSHIP. (SEE FIGURE 3). THE SHADED SECTION IN FIGURE 3 WOULD BE SECTION 23.

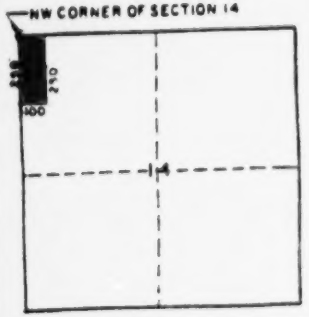
LEGAL DESCRIPTIONS

FIG. 4


1 MILE
NW 1/4 OF THE NW 1/4
W 1/2 OF THE NW 1/4
NE 1/4 OF THE NW 1/4
NE 1/4
SW 1/4 OF THE NW 1/4
SE 1/4 OF THE NW 1/4
EAST 1/2 OF THE NE QUARTER OF THE NW QUARTER OF SECTION 23, TOWNSHIP 4 NORTH, RANGE 2 EAST = 20 ACRES
1/8 MILE X 1/4 MILE
23
1 MILE
SW 1/4
SE 1/4

SOME SECTIONS MAY HAVE BEEN FURTHER DIVIDED AT ONE TIME OR OTHER INTO HALF-SECTIONS (320 ACRES), QUARTER-SECTIONS (160 ACRES), HALF-QUARTER SECTIONS (80 ACRES), AND QUARTER-QUARTER SECTIONS (40 ACRES) AND SO ON. (SEE FIGURE 4).

FIG. 5



NEARLY ALL TRACTS OF LAND IN INDIANA ARE DESCRIBED IN ONE OF 3 WAYS:

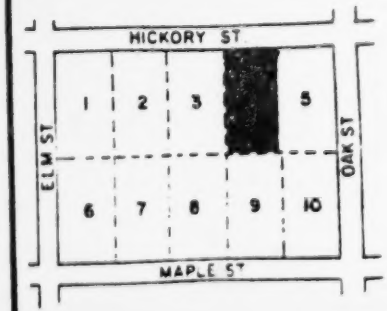
(1) ACREAGE: THE TRACT SHADED IN FIGURE 4 WOULD HAVE A LEGAL DESCRIPTION READING "...THE EAST HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 23, TOWNSHIP 4 NORTH, RANGE 2 EAST.."

(2) METES AND BOUNDS: THE TRACT SHADED IN FIGURE 5 WOULD HAVE A LEGAL DESCRIPTION READING "... BEGINNING AT THE NORTHWEST CORNER OF SECTION 14, TOWNSHIP 4 SOUTH, RANGE 3 EAST...; THENCE EAST ALONG THE NORTH LINE OF SECTION 14 A DISTANCE OF 100 FEET; THENCE SOUTH PARALLEL TO THE WEST LINE OF SECTION 14 A DISTANCE OF 250 FEET; THENCE WEST PARALLEL TO THE NORTH LINE OF SECTION 14 A DISTANCE OF 100 FEET TO THE WEST LINE OF SECTION 14, THENCE NORTH ALONG THE WEST LINE OF SECTION 14 A DISTANCE OF 250 FEET TO THE POINT OF BEGINNING..." (SEE FIGURE 5)

FIG. 6

GREENDALE SUBDIVISION

PLAT BOOK 10, PAGE 147



(3) SUBDIVISION AND LOT: IF A TRACT OF LAND HAS BEEN SUBDIVIDED INTO A SUBDIVISION OF NUMBERED LOTS, THE LEGAL DESCRIPTION FOR A PARTICULAR LOT (SHADED IN FIGURE 6) WOULD READ, FOR EXAMPLE, "... LOT #4 IN GREENDALE SUBDIVISION, AN ADDITION TO THE CITY OF INDIANAPOLIS AS RECORDED IN PLAT BOOK 10, PAGE 147, OFFICE OF THE RECORDER, MARION COUNTY, INDIANA..."

JACK A. SIMON, L.S.
MARION COUNTY SURVEYOR
CITY COUNTY BUILDING
INDIANAPOLIS, INDIANA 46204

Geography Educators' Network of Indiana

425 University Boulevard, Indianapolis, IN 46202
317/274-8879

National Geography Awareness Week
November 12-18, 1989

All teachers who integrate these geographic ideas or others during National Geography Awareness Week will receive a U.S. map and a Certificate of Participation by notifying the GENI office at the address above.

Suggested ideas for integrating geographic concepts into.....

ACCOUNTING

Objectives: To help the students realize the costs involved in running a state park or an environmental land-use area.

To help students realize the high-cost of business operations to provide energy for a community.

1. Discuss the expenses to operate a state or local park or environmental area set aside for public use. To find the figures necessary for this exercise, call the Indiana State Library or a local park office. Discuss how to put these expenses into a general journal and a ledger. Discuss some accounts which are necessary in a state-run operation.

2. Discuss the expenses associated with the operation of a public-run electric company. Discuss the revenue. Discuss the issues of paying stockholders and reinvesting in the business.

3. Discuss the recreational income for a public-owned reservoir and community water source. Discuss whether it balances with the expenses necessary to open the surrounding land to the public.

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Ideas for Integrating Geographic Concepts into.....

ALGEBRA/MATHEMATICS

Objective: To use climatic data of various stations to compute numerous mathematical problems and to discuss practical implications of knowing this information.

1. Using the climatic data attached, convert from metric to English standard and vice versa: millimeters = inches; centigrade = Fahrenheit, using the following formulas:

   $F° = 9/5C+32$ $C° = 5/9(F-32)$ 1mm = .0394"

2. Using the climatic data, make a climagraph of four different stations. Discuss the similarities and differences in respect to Northern and Southern Hemispheres; winter vs. summer seasons; dry summers vs. wet winters. Discuss whether "precipitation" might be in rainfall or snowfall.

3. Using the lesson on orographic lifting, fill in the chart on temperature using the appropriate rate. NOTE: Rates are given per 1,000 feet.

Table 17.1 Temperature and Precipitation Data for Eurasia

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly average
PENINSULAR EUROPE													
1 Aberdeen, Scotland (57°13'N, 02°12'W, 58 m)													
T (°C)	3	3	4	7	9	12	14	14	12	9	6	4	8
P (mm)	77	54	52	52	52	53	62	73	84	90	91	78	837
2 Athens, Greece (37°58'N, 23°43'E, 107 m)													
T (°C)	9	10	11	15	20	25	29	27	24	19	15	11	18
P (mm)	62	38	36	23	23	14	6	7	15	51	56	71	402
3 Barcelona, Spain (41°24'N, 2°9'E, 95 m)													
T (°C)	9	10	12	13	16	22	24	24	22	18	14	10	16
P (mm)	33	42	46	47	52	43	29	48	77	80	49	47	594
4 Bergen, Norway (60°24'N, 5°19'E, 44 m)													
T (°C)	2	1	3	6	10	13	15	15	12	8	6	3	8
P (mm)	179	139	109	140	83	126	141	167	229	236	267	203	1958
5 Bologna, Italy (44°30'N, 11°21'E, 84 m)													
T (°C)	2	4	9	13	18	22	25	24	20	14	8	4	14
P (mm)	41	55	47	54	61	48	32	79	80	74	70	49	589
6 Copenhagen, Denmark (55°41'N, 12°33'E, 9 m)													
T (°C)	0	0	2	7	12	16	18	17	14	9	5	3	9
P (mm)	49	36	32	36	42	47	71	86	82	59	49	49	602
7 London, England (51°29'N, 00°10'W, 5 m)													
T (°C)	4	4	7	9	12	16	18	17	15	11	7	5	11
P (mm)	53	40	37	38	48	46	58	55	50	57	64	49	594
8 Lisbon, Portugal (38°43'N, 9°08'W, 77 m)													
T (°C)	11	12	14	15	17	20	22	23	21	18	14	12	17
P (mm)	111	76	106	54	44	16	3	4	33	62	93	107	708
9 Madrid, Spain (40°25'N, 3°41'W, 667 m)													
T (°C)	5	7	10	13	18	21	24	24	20	14	9	6	14
P (mm)	38	34	45	44	44	37	13	14	32	53	47	48	435
10 Marseille, France (43°27'N, 5°13'E, 3 m)													
T (°C)	6	7	10	13	17	21	23	23	20	15	10	7	14
P (mm)	43	32	43	43	46	24	11	34	60	78	69	66	546
11 Paris, France (48°58'N, 2°27'E, 52 m)													
T (°C)	3	4	7	10	14	17	19	19	16	11	7	4	11
P (mm)	54	43	32	39	53	50	58	62	51	49	50	49	585
12 Plymouth, England (50°21'N, 04°07'W, 26 m)													
T (°C)	6	6	7	9	12	15	16	16	15	12	9	7	11
P (mm)	105	77	73	55	66	58	71	80	82	94	115	115	990
13 Rome, Italy (41°54'N, 12°29'E, 48 m)													
T (°C)	7	8	11	14	18	22	25	25	21	18	12	9	16
P (mm)	78	68	77	73	63	48	14	22	70	129	116	106	881
14 Santander, Spain (43°28'N, 3°48'W, 68 m)													
T (°C)	9	9	10	12	14	17	19	19	18	15	12	10	14
P (mm)	119	89	74	82	80	66	58	84	114	134	134	155	1190
15 Valentia, Ireland (51°56'N, 10°15'W, 9 m)													
T (°C)	7	7	8	9	11	14	15	15	14	12	9	8	11
P (mm)	164	107	103	74	86	81	107	95	122	140	151	164	1398
CONTINENTAL EURASIA													
16 Beijing (Peking), China (39°57'N, 116°19'E, 52 m)													
T (°C)	-5	-2	5	14	20	25	26	25	20	13	4	-3	12
P (mm)	4	6	9	17	35	78	243	141	68	18	11	3	623
17 Belgrade, Yugoslavia (44°48'N, 20°27'E, 132 m)													
T (°C)	0	2	6	12	17	21	23	22	18	13	7	3	12
P (mm)	48	46	46	54	75	96	80	58	58	55	61	65	791
18 Harbin, China (45°45'N, 126°38'E, 143 m)													
T (°C)	-20	-16	-5	6	14	20	23	22	14	6	-7	-17	3
P (mm)	4	6	17	23	44	92	187	178	82	36	18	5	577
19 Irkutsk, USSR (52°18'N, 104°18'E, 488 m)													
T (°C)	-21	-19	-10	-1	8	15	18	15	8	0	-11	-19	-1
P (mm)	12	8	9	15	26	63	102	96	49	30	17	15	453
20 Moscow, USSR (55°45'N, 37°34'E, 156 m)													
T (°C)	-10	-10	-5	4	12	15	18	16	10	4	-2	-8	4
P (mm)	31	26	33	36	57	67	74	74	64	61	54	53	573
21 Obihiro (Dikan, USSR (77°30'N, 80°14'E, 72 m)													
T (°C)	-26	-26	-23	-13	-6	-1	4	5	1	-7	-19	-23	-12
P (mm)	20	13	17	8	11	23	33	46	42	31	19	18	268
22 Potsdam (Berlin), Germany (52°23'N, 13°04'E, 81 m)													
T (°C)	-1	0	3	8	13	17	19	19	16	9	4	1	9
P (mm)	44	36	32	42	47	66	71	71	46	47	46	40	590
23 Sonnblick, Austria (47°03'N, 12°57'E, 3,106 m)													
T (°C)	-13	-13	-11	-8	-4	-1	2	1	-1	-4	-8	-11	-6
P (mm)	118	108	113	153	138	142	134	134	104	118	108	111	1496
24 Stockholm, Sweden (59°21'N, 18°04'E, 44 m)													
T (°C)	-3	-3	-1	4	10	15	18	17	12	7	3	0	7
P (mm)	43	30	26	31	34	46	61	78	60	48	53	48	555
25 Tromsö, Norway (69°39'N, 18°57'E, 114 m)													
T (°C)	-4	-4	-3	0	4	9	12	11	7	3	0	-2	3
P (mm)	96	79	91	65	61	50	58	80	109	115	96	86	994
26 Verkhoyansk, USSR (67°33'N, 133°23'E, 137 m)													
T (°C)	-49	-44	-30	-13	3	13	15	11	3	-10	-36	-46	-16
P (mm)	7	5	5	4	9	25	33	30	13	11	10	7	155
27 Vienna, Austria (48°15'N, 16°22'E, 203 m)													
T (°C)	-1	0	5	10	15	18	20	19	16	10	6	1	10
P (mm)	40	43	45	45	70	67	83	72	61	64	63	48	660
28 Vladivostok, USSR (43°07'N, 131°54'E, 136 m)													
T (°C)	-15	-11	-4	4	9	13	18	20	16	9	-1	-11	4
P (mm)	10	13	20	44	69	86	101	145	126	67	31	17	731
29 Warsaw, Poland (52°09'N, 20°59'E, 107 m)													
T (°C)	-4	-3	1	8	14	18	19	18	14	8	3	-1	8
P (mm)	23	29	24	36	44	62	79	65	41	35	37	30	502
SOUTHWEST ASIA													
30 Ankara, Turkey (39°57'N, 32°53'E, 902 m)													
T (°C)	0	1	5	11	16	20	23	23	18	13	6	3	12
P (mm)	35	36	36	34	50	31	13	8	19	22	29	44	350
31 Baghdad, Iraq (33°20'N, 44°24'E, 34 m)													
T (°C)	10	12	16	22	28	33	35	34	31	25	17	11	22
P (mm)	26	24	23	22	7	0	0	0	0	4	17	33	145
32 Baku, USSR (41°45'N, 41°40'E, 92 m)													
T (°C)	0	7	9	11	18	20	23	23	20	16	12	9	14
P (mm)	237	205	136	136	82	165	178	233	315	261	294	260	2504
33 Jerusalem, Israel (31°52'N, 35°13'E, 755 m)													
T (°C)	8	9	11	15	19	22	23	24	22	20	15	11	17
P (mm)	143	129	102	25	6	0	0	0	1	9	75	136	627
34 Kabul, Afghanistan (34°30'N, 69°13'E, 1,885 m)													
T (°C)	-2	1	6	12	18	22	25	24	20	14	6	3	13
P (mm)	33	36	62	84	22	4	2	2	1	10	15	14	316
35 Riyadh, Saudi Arabia (24°42'N, 46°43'E, 564 m)													
T (°C)	15	17	22	25	29	33	34	34	31	29	21	16	25
P (mm)	26	16	17	21	14	9	9	6	6	9	12	12	165

San Francisco, California (38°N 122.5°W) elevation 16 feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
T (°F)	48	52	54	55	59	61	63	63	64	61	55	50	57.1°F
P (in)	4.0	3.5	2.7	1.3	0.5	0.1	0.0	0.1	0.2	0.7	1.6	4.1	18.8"

Sacramento, California (38.5°N 121.5°W) elevation 43 feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
T (°F)	46	50	54	61	66	72	77	75	73	64	54	48	61.7°F
P (in)	3.2	3.0	2.4	1.4	0.6	0.1	0.0	0.1	0.2	0.8	1.5	3.2	16.5"

Reno, Nevada (39.5°N 120°W) elevation 4,397 feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
T (°F)	32	36.5	41.5	48	55	62.5	70.5	69.5	61	51.5	41.5	33.5	50.3°F
P (in)	1.5	1.1	0.8	0.5	0.5	0.3	0.2	0.2	0.2	0.3	0.6	0.9	7.1"

Salt Lake City, Utah (40.5°N 112°W) elevation 4,218 feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
T (°F)	28	34	41	50	59	66	77	75	64	54	37	32	51.4°F
P (in)	1.3	1.2	1.6	1.8	1.4	1.0	0.6	0.9	0.5	1.1	1.3	1.3	14.0"

Denver, Colorado (40°N 105°W) elevation 5,280 feet (1 mile)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
T (°F)	30	32	37	48	57	66	73	72	64	52	39	34	50.3°F
P (in)	0.6	0.7	1.2	2.1	2.7	1.5	1.6	1.3	1.1	1.0	0.7	0.5	15.0"

Omaha, Nebraska (41°N 96°W) elevation 977 feet

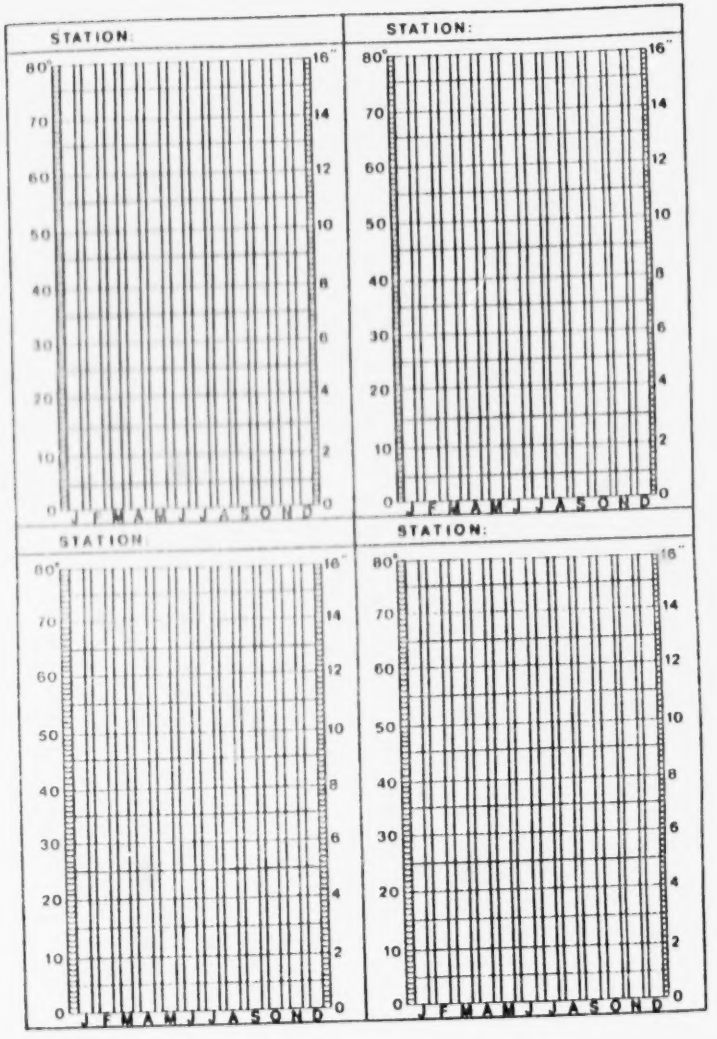
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
T (°F)	23	27	37	52	63	73	79	77	66	55	39	28	51.6°F
P (in)	0.8	0.9	1.4	2.6	3.5	4.5	3.4	4.0	2.6	1.7	1.3	0.8	27.5"

Indianapolis, Indiana (39°45'N 86°15'W) elevation 705 feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
T (°F)	26	30	40	52.5	62.5	71.5	75	73	66.5	55	42	31.5	52.1°F
P (in)	2.7	2.4	3.6	3.7	3.7	4.0	4.3	3.5	2.7	2.5	3.0	3.0	39.1"

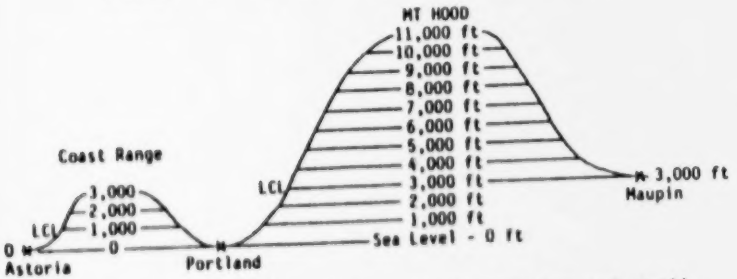
New York City, New York (41°N 74°W) elevation 131 feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
T (°F)	31	31	38	49	59	69	74	72	66	56	44	34	51.9°F
P (in)	3.3	3.3	3.4	3.3	3.4	3.4	4.1	4.3	3.4	3.4	3.4	3.3	42.0"



Lab Exercises & Study Guides
for Physical Geography
Timothy S. Brothers
Thomas B. Williams 1986

Orographic Lifting - Air Flow over a Topographic Barrier



In the Pacific Northwest, prevailing westerly winds blow cool, humid maritime polar air onshore. The air is forced to rise up and over two mountain ranges: the Coast Range (3,000 feet high); the Cascade Range, where Mt. Hood reaches 11,000 feet in elevation. In this problem, the condensation level (LCL) is reached at 1,000 feet on the windward side of the Coast Range. After the air crests the lower range and sinks back down to sea level (0 ft) at Portland, condensation occurs again at 3,000 feet when the air is lifted orographically up the western slopes of Mt. Hood.

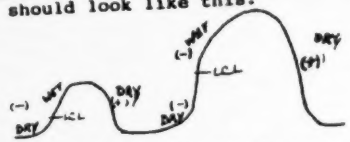
Fill in the table below, calculating the adiabatic temperature changes and indicating which rate you used in the process:

Dry Adiabatic Rate 5.5°F per 1000 feet
Wet Adiabatic Rate 3.0°F per 1000 feet

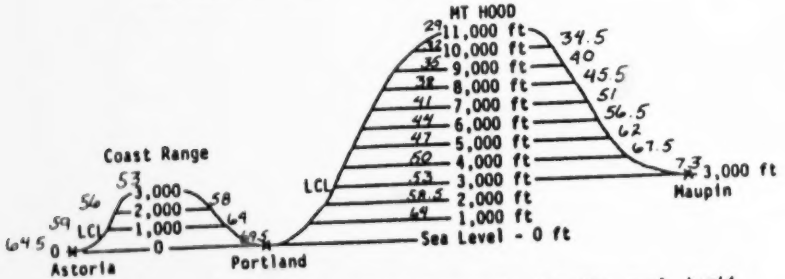
LOCATION	ELEVATION	TEMPERATURE	ADIABATIC RATE USED
Astoria	0 feet	64.5°F	---
Condensation Level (Coast Range)	1,000 ft		Dry A. R.
Summit of Coast Range	3,000 ft		
Portland	0 feet		
Condensation Level (Cascade Range)	3,000 ft		
Summit of Mt. Hood	11,000 ft		
Maupin	3,000 ft		

ANSWER SHEET

Teacher NOTE: When air rises temperature falls (subtract), when air sinks temperature rise (add). Use the DRY RATE until the LCL is reached, and on the Leeward side (in this case, the right side) of the mountain; Use the WET RATE above the LCL up to the top of the mountain. The students' work should look like this:



Orographic Lifting - Air Flow over a Topographic Barrier



In the Pacific Northwest, prevailing westerly winds blow cool, humid maritime polar air onshore. The air is forced to rise up and over two mountain ranges: the Coast Range (3,000 feet high); the Cascade Range, where Mt. Hood reaches 11,000 feet in elevation. In this problem, the condensation level (LCL) is reached at 1,000 feet on the windward side of the Coast Range. After the air crests the lower range and sinks back down to sea level (0 ft) at Portland, condensation occurs again at 3,000 feet when the air is lifted orographically up the western slopes of Mt. Hood.

Fill in the table below, calculating the adiabatic temperature changes and indicating which rate you used in the process:

Dry Adiabatic Rate 5.5°F per 1000 feet
Wet Adiabatic Rate 3.0°F per 1000 feet

LOCATION	ELEVATION	TEMPERATURE	ADIABATIC RATE USED
Astoria	0 feet	64.5°F	---
Condensation Level (Coast Range)	1,000 ft	59.0°F	Dry A. R.
Summit of Coast Range	3,000 ft	53.0°F	Wet
Portland	0 feet	69.5°F	Dry
Condensation Level (Cascade Range)	3,000 ft	53.0°F	Dry
Summit of Mt. Hood	11,000 ft	29.0°F	Wet
Maupin	3,000 ft	73.0°F	Dry

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Ideas for integrating geographic concepts into.....

ART

Objectives: (1) For students to realize that physical and cultural influences impact the world of art.

(2) To justify the use of color as a visual and psychological tool for impact.

1. Locate on a map or globe the home towns of various artists. Discuss the local surroundings such as climate, physical features, and cultural impressions that might have influenced their work.

2. Discuss and locate on a map where various art supplies and equipment are made and why.

3. Locate on a map the major art centers in the world: Paris, New York, New Orleans, etc. Explain why the location was important in their influence upon the artistic world.

4. Design a color-coded map that would demonstrate various climates, products or cultures and explain why those particular colors best symbolize what they are chosen to represent.

5. Make clay sculptures of different types of land forms. (River valleys, mountains...)

6. Study the ART of cARTography. Discuss the art work on early maps (dragons in the oceans) and early cartographic techniques.

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Ideas for integrating geographic concepts into.....

DRAMA/STAGECRAFT

Objective: To recognize regional English accents in the U.S. and the rest of the world.

A. Have the students distinguish between and imitate a "Hoosier" accent and a Kentucky accent through reading a passage from a book. Identify the area of extent of the accent on a map. Other U.S. accents students might distinguish and imitate include:

Bostonian-Irish	Texan	Midwest
Georgian	Cajun	Valley Girl
"T.V."	"Jersey"	Appalachian

B. English accents vary across the world. Have the students distinguish and imitate two British accents, e.g. Cockney and "BBC." Other accents include:

Australian	Pigeon
"Queens" English	Carribbean
Canadian	Scottish
New Zealand	

C. English accents also vary depending on the language first learned by the speaker. Have the students distinguish and imitate possible accents (while speaking English) of people whose native language is:

French	Chinese	Japanese
Spanish	Russian	Greek
Hindi	German	Persian

-- over --

STAGECRAFT

Objective: To recognize geographic locations through the study of stage settings and scenes as described in plays.

1. Have the students recognize geographic settings which are included in various plays. Discuss the necessary differences in scenes from one location to another.

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Ideas for integrating geographic concepts into.....

ENGLISH LITERATURE

The Study of "Place" in the Novel or Short Story

Objective: To study "place" in the novel/short story. The students are to go away from the lesson with a grasp on the idea that the setting, or place, of the novel is sometimes very important. The students should also develop a clear sense of the "place" the author is trying to convey in his/her writing.

A. 1. Have the students read a novel or short story. Some suggestions: To Kill a Mockingbird by Harper Lee; "Sonny's Blues" by James Baldwin; "The Short Happy L[illegible] of Francis Macomber" by Ernest Hemingway.

2. Divide the class into groups of four or five. (This is not necessary, but smaller groups may facilitate/promote discussion.) Have the group choose a spokesperson who will report to the class later.

3. Have each group answer the following questions:

a. Where is the setting of the novel or short story?

-- over --

b. What examples can be pulled from the story which depict the "place" being described?

c. Has time changed the "place" where the story takes place?

d. Could this story take place somewhere else? Why or why not?

e. Compare and contrast the story's setting with the place where you live.

4. Have each group's spokesperson report the answers to the questions to the rest of the class.

5. Hold a class discussion.

*This exercise can be used for most novels or short stories.Choose those novels which portray a distinct sense of place. Other novels include: Pride and Prejudice, by Jane Susten; The Sun Also Rises, by Ernest Hemingway; Catch 22, by Joseph Heller; A Room With a View, by E. M.Sorster; or Grapes of Wrath, by John Steinbeck. Some suggested short stores: "The Cast of Amontillado" by Edgar Allan Poe; "Babylon Revisited" by F. Scott Fitzgerald.

B. For further study, have the students write an essay comparing and contrasting a novel wherein the setting, or "place," is important and a novel where the setting is of minimal importance. Novels in which "place" plays a minimal role include: The Stranger, by Albert Camus; Crime and Punishment, by Fyoder Dostroyesky; The Cat's Cradle, by Kurt Vonnegut.

C. Select some novels in which the setting can be either important or irrelevant, depending on the interpretation. Have the student write an essay which argues that the setting of the novel is important or irrelevant. Novels in which the importance of the setting is questionable include: Wuthering Heights, by Bronte; A Farewell to Arms, by Ernest Hemingway; Invisible Man, by James Baldwin; and The Great Gatsby, by F. Scott Fitzgerald. Examples of short stories might include: "The Lottery" by Shirley Jackson or "The Kugelmass Episode" by Woody Allen.

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Ideas for integrating geographic concepts into.....

FOREIGN LANGUAGES

Objective: To impress the student with the overall impact of culture on a people from a variety of locations. To discuss geographic principles as relating to languages and cultures.

1. Discuss the full impact of culture on a society. Culture includes language, religion and beliefs.

2. Discuss early exploration routes and the consequences of cultures being transplanted in varied, world-wide locations; i.e., Spain--Mexico, Florida, etc.

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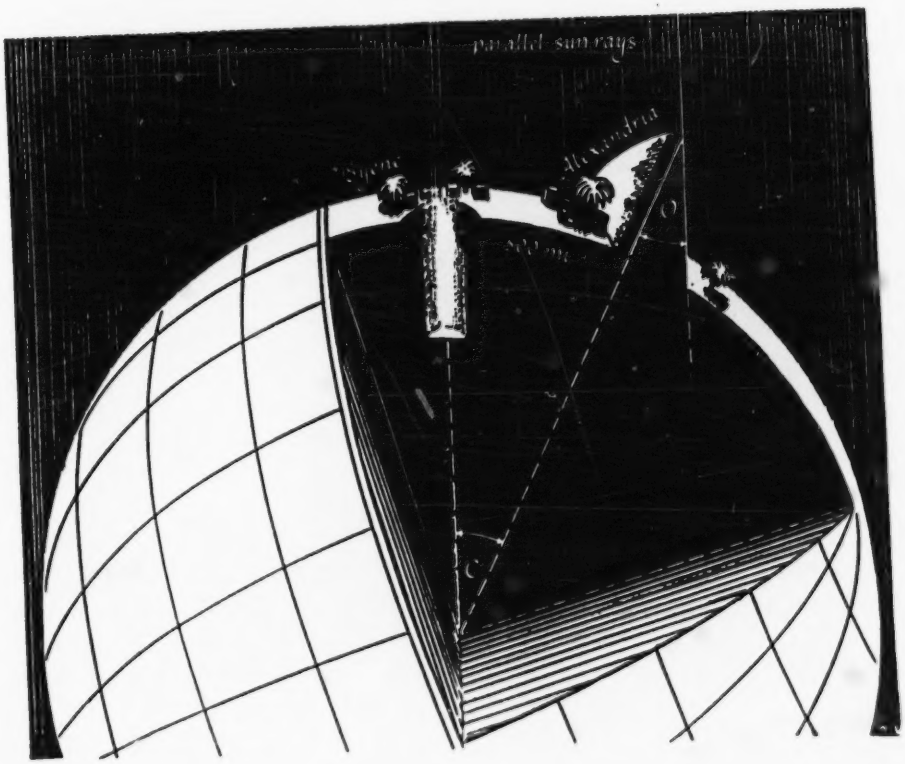
Ideas for integrating geographic concepts into.....

GEOMETRY

Objective: To show geometrically how Eratosthenes calculated the Earth's circumference



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Geometry (continued).....

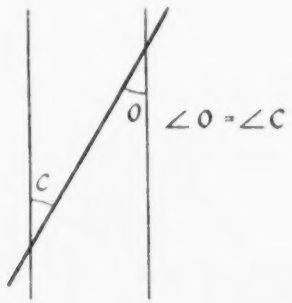
Background:

Eratosthenes, the first man who actually measured the earth, was a poet. How did a poet know the principles of higher mathematics and engineering necessary to arrive at such a figure? What kinds of equipment do you think was necessary to measure the circumference of the earth? Actually this immense task was done almost single-handed, with less arithmetic and equipment than would seem possible.

Eratosthenes was the head librarian at the best-stocked library in the world at the time (220 B.C.) in Alexandria. This was almost exactly 500 miles north of a city named Syene (now Aswan) which was on the Tropic of Cancer, where once a year the sun was directly overhead. One 21st or 22nd of June, Eratosthenes noticed that these direct sun rays completely lit up a deep well. Since Eratosthenes knew that Alexandria and Syene were directly 500 miles apart north and south, the line made up a meridian (part of a great circle), he imagined that if the well shaft continued to the center of the earth, it would be like a sunlit radius that made up a part of a great circle--the circumference of the earth. Eratosthenes was sure that although no shadows were cast on this day at Syene, 500 miles north of Alexandria, walls would cast shadows because of the curve of the earth. He realized that next year at the same time with little equipment that he could measure the angle of the sun from the shadows.

Eratosthenes knew he could measure this because he remembered some of the geometry he learned as a boy:

"Parallel lines crossing a straight line make alternate angles. Alternate interior angles are equal."



Geometry (continued)....

If angle O is the sun's angle at Alexandria, then the sun rays crossing the post there make that angle. Angle C would represnet the center of the earth. If he knew how many degrees in angle C, he would know how many degrees were in the 500 mile arc between the two towns.

On the next June 21st at noon when the sun's rays were directly overhead in Syene, and with a pole set up at Alexandria which was exactly vertical representing an earth-radius sticking above the ground, he measured the angle at the top of the pole and found it to be 7.2°.

Assignment:

1. Locate Alexandria and Syene (Aswan) on a map, atlas, or preferably a globe, discussing the background information on Eratosthenes.

2. Discuss sun angle as related to the summer solstice and The Tropic of Cancer. (i.e., every June 21 or 22 the sun's rays are directly overhead The Tropic of Cancer [an invisible point] at 23 1/2° N. of the equator. Point to this location on a globe or representative sphere.

3. Discuss great circles and meridians.

4. Discuss the geometry application of "parallel lines"....

5. Find the circumference of the earth using Eratosthenes' figures and reasoning. (If there are 360° in the circle of the earth, what would be the circumference of the earth? 7.2 is 1/50th of 360, So 50 x 500 mi. is 25,000 mi. Very close to the known 24,860 miles.

6. Discuss the difference in measurement if he actually measured angle O at 7 1/2° or 1/48th of a circle (24,000 mi.).

7. Discuss the reasons for the slight error:

   a. Syene (Aswan) is not quite due south of Alexandria; it is a bit to the east.

   b. The Tropic of Cancer is actually a few miles farther south than Syene, so 500 was just a bit small of a number to multiply.

Imagine the things that can be learned with a basic knowledge of geometry! It has many applications.

Figures from Mapping by David Greenhood.
Chicago: University of Chicago. 1964
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Ideas for integrating geographic concepts into....

GLOBAL STUDIES/SOCIAL STUDIES

Objective: To map economic trading ties of the U.S.

Materials: 8 1/2" x 11" world map for each student with countries delineated, atlases for the class or a world map wall hanging and/or globe, colored pencils.

1. As a homework assignment, have each student make a list of at least twenty household goods, clothes, appliances, etc. with their place of production, such as Taiwan, Sri Lanka, the U.S., Germany, etc.

2. In class, have the students locate each country included in their list on a world map.

3. Then, the student should color in the country's outline on the map provided. Use ink on top of the coloring to show the number of items from that country.

This assignment can be adapted to any grade level. Complexity can vary with the number of items to be mapped or how the countries are to be colored. For example, eleventh graders could be asked to list 50 items and color-code the map. When the students map the items, the colors should correspond to groups of goods: green for appliances, red for clothing, blue for food, etc.

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BASE MAP SOURCE: RAND McNALLY 1981 COSMOPOLITAN WORLD ATLAS

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Ideas for integrating geographic concepts into.....

HEALTH

Objectives: --To alert students to the spatial significance of health topics.

--To give a geographic perspective to current health issues.

1. Map a disease using statistics from local health organizations, State Board of Health, or Federal government statistics. For example, Indiana State Board of Health, 1330 West Michigan, Indianapolis, IN 46202, disperses information and maps on the spread of Aids by Indiana counties (see back of page). These maps could be used to discuss the significance of health issues such as:

   a. The spread of communicable diseases;
   b. The quarantine of certain disease-carrying persons;
   c. The possibility of contracting certain diseases in certain areas.

2. Map and discuss a local health problem; i.e., incidence of cancer is sometimes higher around toxic waste sites or former dump sites.

3. Map the spread of a certain disease such as Aids from Africa and Haiti to U. S. cities, etc. Explain how the geographic transfer occurred noting common transportation patterns.

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Ideas for integrating geographic concepts into.....

HOME ECONOMICS

Objective: To discuss and map the international cultural influences on food and clothing.

1. Have each student find the geographic origin of 20 food products found in their homes or in a local grocery store. Discuss why these particular locations would be sources for these foods. Map these locations. Discussions of climates, physical surroundings and labor sources, as well as transportation networks, would also be appropriate.

2. Discuss the origins of various cultural dishes. Have the students bring to class their favorite recipes for an international dish. Samples could be brought from home.

3. Have an "international cook-off" in the class and vote on a winner.

4. Have each student list the international origin of 6-10 various clothing items in their homes or in a local store. Map the locations of these as a class.

5. Hold an "international costume day" with students wearing or displaying pictures or drawings of various international clothing. Discuss the climatic and cultural influences of the materials used in these clothing items.

6. Map the distrubution of the major world-wide suppliers of materials used in clothing. For example: wool, cotton, linen, silk.

How are these origins explained?

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Ideas for integrating geographic concepts into.....

INDUSTRIAL ARTS

Objective: To provide students with geographic reasoning as connected with the industrial arts materials and methods they use in class.

Woodworking: Match and map the types of woods used in class with the country or geographic area from which they come. Discuss climate and transportation impacts upon these locations.

Metal Shop: List the car types we drive and repair and locate the country that manufactured them. Discuss the raw materials that are available in that country and the materials that would have to be imported.

Print Shop: Discuss the history of printing and type, using maps or globe to plot the dispersion of the typeset industry.

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Ideas for integrating geographic concepts into.....

PHYSICAL EDUCATION

Objective: To discuss international implications on games and sports.

1. Study and discuss the origins of games and sports.
2. Compare and contrast the local popularity of such sports as:
   a. soccer = Brazil, Ireland, United States
   b. hockey = Canada, Peru, Mexico
   c. golf = England, United States, France
   d. cricket = United States, Australia, England
   e. football = Mexico, United States, Colombia
   f. baseball = United States, Cuba, Japan

   Locate these countries on a map as you discuss. Discuss the possible effects of climate and physical surroundings upon this popularity.
3. Map the countries that participate in the Olympic Games and name the countries that excel in a particular "game." Why is that?
4. Map the countries that have hosted the Olympic Games in the past century. Guess where the next 5-10 Olympic Games will be held.

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Ideas for integrating geographic concepts into.....

PSYCHOLOGY

Objective: To make students aware of personal space.

Space is not just confined to direction, distance, or area. Space is also personal. How we "distance" ourselves from other people, how we "position" ourselves in relation to others, and how much "space" we actually take up can reveal much about our character to other people who come to observe.

1. Divide the class into working groups of two individuals.

2. Have each group of two complete the following tasks:

   a. Observe people in two public settings. Either in the lunchroom or library or at a restaurant or ball game, for a period of one hour.

   b. Discuss cultural differences in the way space is used. Make specific notes as to where each person sits and how they behave in relation to other people. Draw a map if possible.

   c. Note the direction (left, right, in front of, behind) that people choose to sit in relation to the other people. Also note how much space (in inches, feet) is between each person and how much space each person takes up (one table, one seat, one row, three chairs, etc.).

   d. Discuss cultural differences in the way space is used.

   e. Do not interfere with the people you are observing.

   f. Interpret some of your observations. For example, those people who sit or stand near each other are usually friends, or shy people sit by themselves, or people who want to work in the library usually sit next to the window, etc.

-- over --

g. Bring all your notes to class.

3. Group the students into groups of six: three sets of partners. Have the students discuss their findings/interpretations. Note points of agreement and disagreement. Select two spokespersons.

4. Have the spokespersons report their groups' conclusions to the rest of the class.

5. Questions to consider:

--Is there a consensus on behavior and use of space?

--Is it appropriate to interpret the use of personal space and attribute the use to personality characteristics?

--How does "place," e.g. libraries, ball games, and restaurants differ in the interpretations?

6. Study the culture shock foreign-exchange students go through.

7. Study psychological implications of visiting New York City for the first time, coming from a rural area (and vice-versa.

8. Study the psychological implications of Las Vegas:

--night city vs. day city

--drinks are free

--impact of gambling, religious conventions

--crime

--psychological implications of living in a city with so many lights.

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SOCIOLOGY

1. Divide the class into four or five small discussion groups.

   a. Have each group define "neighborhood."

   b. List the definitions on the blackboard or overhead.

   c. Discuss the similarities and differences between the definitions.

   Note: Look for geographic boundaries. How do the boundaries vary? Is it necessary to have boundaries?

2. Repeat the exercise defining the term "community."

3. Compare and contrast the concepts of "neighborhood" and "community."

4. Discuss the students' cultural backgrounds. Locate on a map the origins of their ancestors.

   Discuss the impact (or lack of) of this particular culture on their socialization process, including: their religious beliefs, the unspoken or silent "rules" of the family, their manners/customs.

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Ideas for integrating geographic concepts into.....

SPEECH

Objective: To heighten the student's awareness of other cultures.

The following is a series of possible speech titles that might be of interest. The topics have been divided into three groups according to the type of speech: persuasive, speculative, and informative.

A. Persuasion:

--Why it is necessary to know a second language.

--Travel abroad to know the world.

--The positive qualities of multi-culturalism.

--Should we preserve culture? YES!

--Why geography needs to be required in high school.

B. Speculative:

--The future without language barriers.

--Define: Cultural homogeneity: What would it be like?

--A food distribution plan to alleviate hunger in the third world.

-- over --

Speech (Continued)

C. Informative:

--The cultural regions of South America (use maps as props.

--Wine Regions of France.

--The difference between accent, dialect and language.

--How politics, economics and culture mix.

--Gender differences in the U.S. and the Middle East.

PHYSIOGRAPHIC DIAGRAM OF INDIANA

J. E. SCHEIER INDIANA UNIVERSITY

LAKE
PORTER
LAPORTE
ST. JOSEPH
ELKHART
LAGRANGE
STEUBEN
NOBLE
DEKALB
STARKE
MARSHALL
KOSCIUSKO
WHITLEY
ALLEN
JASPER
PULASKI
FULTON
NEWTON
WHITE
CASS
MIAMI
WABASH
HUNTINGTON
WELLS
ADAMS
BENTON
CARROLL
HOWARD
GRANT
BLACKFORD
JAY
WARREN
TIPPECANOE
CLINTON
TIPTON
MADISON
DELAWARE
RANDOLPH
FOUNTAIN
MONTGOMERY
BOONE
HAMILTON
HENRY
WAYNE
VERMILLION
PARKE
PUTNAM
HENDRICKS
MARION
HANCOCK
RUSH
FAYETTE
UNION
VIGO
CLAY
OWEN
MORGAN
JOHNSON
SHELBY
FRANKLIN
DECATUR
DEARBORN
MONROE
BROWN
BARTHOLOMEW
RIPLEY
SULLIVAN
GREENE
JENNINGS
OHIO
JACKSON
LAWRENCE
JEFFERSON
SWITZERLAND
KNOX
DAVIESS
MARTIN
SCOTT
WASHINGTON
ORANGE
CLARK
PIKE
DUBOIS
FLOYD
GIBSON
CRAWFORD
HARRISON
WARRICK
SPENCER
PERRY
POSEY
VANDERBURGH

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GEOGRAPHY AWARENESS WEEK

RESPONSE FORM

Name:

School:

Address:

Telephone No.:

What activities did you plan?

Which ones were the most successful?

Why do you think that was?

What would you add and expand on next year?

What would you do differently?

-- over --

With No. 5 being the most positive, how would you rank the week on these dimensions?

Your time involvements:	5	4	3	2	1	N/A
The active participation of:						
--the students	5	4	3	2	1	N/A
--other teachers	5	4	3	2	1	N/A
--your local community	5	4	3	2	1	N/A
--local media	5	4	3	2	1	N/A
GENI Alliance interaction:						
--instructions	5	4	3	2	1	
--resources made available	5	4	3	2	1	
--help from GENI office	5	4	3	2	1	

How could the GENI office have been a bigger help to you?

Further suggestions and/or comments:

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